

Operational Reconnaissance: The Missing Link?

**A Monograph
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Abstract

OPERATIONAL RECONNAISSANCE: THE MISSING LINK? by MAJ Matthew K. Green, US ARMY, 52 pages.

This monograph examines the nature of operational reconnaissance. It proposes a theory of operational reconnaissance compatible with the demands of the U.S. Army's Objective Force concepts. The paper opens with a discussion on the relationship of reconnaissance in the overall command, control, communications, computers, intelligence, surveillance, and reconnaissance system (C4ISR). It concludes that the ability to conduct reconnaissance is the limiting factor of the system and posits that existing doctrine fails to provide an adequate examination of reconnaissance at the operational level.

The paper focuses the discussion based on three research criteria extracted from essential characteristics of the Objective Force as described in the Objective force Organizational and Operational Plan. These three criteria are the ability to gain reconnaissance superiority across multiple dimensions of conflict, the ability to generate tempo, and the ability to transition from one operation to the next.

Chapter Two examines current doctrine to determine its usefulness in developing the objective force. It determines that current doctrine fails to provide adequate definitions. It describes an Intelligence, Surveillance, and Reconnaissance system (ISR) that fails to address the requirements of security in achieving information dominance. Finally, it fails to recognize a distinction between strategic, operational, and tactical reconnaissance. These failures limit its utility in developing the Objective Force.

Chapter Three examines future force concepts to determine the demands expected of any proposed theory of reconnaissance. It examines the concept of maneuver out of contact, the demands of force projection, and the nature of ISR in full spectrum operations. The examination identifies a significant disconnect between current doctrine, future force concepts, and the attributes of the Objective Force.

To fill gaps between current and future concepts, Chapter Four examines two historical doctrines to inform the creation of a new theory of reconnaissance. The chapter examines the WWII German doctrine found in Truppenfuhrung, and the WWII Soviet Doctrine expressed in PU-36. While neither of these doctrines provides a sufficient stand-alone theory of reconnaissance, they combine to provide useful insight into the nature of reconnaissance. Specifically, they elaborate on the tension between reconnaissance and security, the levels of reconnaissance, and the problems of sequencing battles and executing transitions.

Chapter Five distills the lessons of chapters two through four into a proposed theory of operational reconnaissance. The new theory clarifies the definitions of reconnaissance and surveillance. It replaces the Intelligence, Surveillance, and reconnaissance system with an Intelligence, Security, and reconnaissance system. It identifies and defines the three levels of reconnaissance, strategic, operational, and tactical. Finally, it proposes a set of five fundamentals of operational reconnaissance.

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CHAPTER ONE

INTRODUCTION

The U.S. Army's experimentation with new technologies and a rise in the awareness of systems thinking has given birth to the idea of a revolutionary command system referred to as command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR). This system empowers a commander to "see first, understand first, and act first,"¹ by providing an unprecedented level of situational understanding, and the ability to share this understanding and the commander's vision of operations to subordinates. The C4ISR system has several essential functions. First, it must collect information (reconnaissance and surveillance). Next, it must analyze that information and match it to the commander's needs (intelligence). Intelligence informs the commander's judgement to produce a vision (command), which is in turn translated into directives (control), and disseminated to higher, subordinate, and adjacent commanders (communications and computers). If this system works at peak efficiency, the U.S. Army believes it can seize and hold the initiative, thereby gaining a decisive advantage over its foe.

This monograph will examine two components of the C4ISR system – reconnaissance and surveillance. The thesis of the paper is; the U.S. Army does not have a theory of operational reconnaissance to guide its doctrine and force structure development. Consequently, it will not be able to maximize other advances in command and control to their full potential. Chapter One explains why reconnaissance and surveillance is the limiting factor in the C4ISR system. It also describes the three criteria that will guide continued analysis throughout the monograph. Chapter Two examines current army doctrine to assess its utility in gathering the information required to enable the command system. The third Chapter looks at future force concepts to determine any

¹ US Army. United States Army White Paper: Concepts for the Objective Force (Washington D.C.: Department of the Army; available from <http://www.objectiveforce.army.mil/pages/objectiveforcewhitepaper.pdf>; internet; accessed 23 Oct 02), 6-8.

gaps between current doctrine and projected requirements. This discussion will illustrate a gap in the army doctrine at the operational level. Chapter Four will examine several historical doctrines in an attempt to fill the gap identified in chapter Three. The monograph will conclude with Chapter Five, a synthesis of the state of doctrine, theory, and history, presented as a framework for a theory of operational reconnaissance.

Reconnaissance is the limiting factor

The old adage that a chain is only as strong as its weakest link is clearly an indication of systems thinking. While a chain is admittedly a simple system, it clearly demonstrates two useful notions. The first is the synergistic effect of a system; the whole is greater than the sum of its parts. You can do things with a chain that you could never do with a collection of metal links. Secondly, the system is limited by the weakest part of the system – its critical vulnerabilities.² If these ideas are valid for all systems, then the C4ISR system envisioned for the objective force must have both a synergistic effect, and correspondingly, a weakest link. In this case, the benefit is the ability to “see first, understand first, and act first” thereby rapidly seizing and retaining the initiative³. The weak link is reconnaissance and its sister surveillance.

Reconnaissance is the critical node in the C4ISR system for two reasons. The first is relatively straight forward and the second a bit more complex. As input into the system, intelligence must be accurate, relevant, timely, and predictive⁴. Degradation of any of these qualities will carry on through the system resulting in faulty output, in this case, a bad decision. This notion of “garbage in equals garbage out” is nothing new. What is new is the critical

² Strange, Joe. “Centers of Gravity & Critical Vulnerabilities: Building on the Clauswitzian Foundation So that We Can All Speak the Same Language”; Perspectives on warfighting, Number Four, Second edition. (Marine Corps University Foundation: Quantico, Va, 1996), 1-4.

³ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001), 11-3.

⁴ US Army. FM 34-1, Intelligence and Electronic Warfare Operations (Washington D.C.: Department of the Army, September 1994), 2-7.

function that speed has in the system. Advances in technology have created huge improvements in the efficiency and speed of all components of the C4ISR system, except reconnaissance. These changes have created a shift in command and control systems. Historically, armies have faced the problem of communicating information to the commander, and getting orders back to subordinates in a timely manner.⁵ The weak links were communication and control. In the information age, the control revolution has shifted the burden back to collection.

James R. Beniger describes this phenomenon in his book The Control Revolution: Technological and Economic Origins of the information Society. Beniger's system is essentially an economic one, which consists of four sequential functions: extraction, production, distribution, and consumption. He argues that technology and scale have caused these functions to become increasingly complex over history. An ancient farmer extracted a small crop from the land that fed his family. This left him only small amounts of excess to produce other products and to distribute it for their consumption. As farming became more efficient, the requirement for increasingly complex distribution systems and controls to regulate it emerged. A second wave of change occurred when technology increased the speed of transportation beyond that of the horse. Industry was now capable of creating and dispersing more goods than its consumers needed. This generated new controls in the form of advertising and feedback loops to the producers. This cycle continues to accelerate until the pace of the human mind can no longer control it. Information technology and computers become necessary to avoid collapse of the system⁶. The obvious unstated conclusion of Beniger's argument is that when the speed of control approaches zero, or near-real-time, the system will once again be limited by the speed of extraction. In the

⁵ Van Creveld, Martin. Command in War (Cambridge, Massachusetts: Harvard University Press, 1985), 1-15.

⁶ Beniger, James R. The Control Revolution: Technological and Economic Origins of the Information Society (Cambridge, Massachusetts: Harvard University Press, 1986), 426-436.

case of our command and control system, information gathering, reconnaissance and surveillance, is the functional equivalent of extraction.

Modern information and command and control systems have already advanced to near real time and have shifted the time burden back to reconnaissance. Advanced communications systems allow transmission of both digital and voice across increasing distances using satellite technology. Radio networks like Enhanced Position Location Reporting System (EPLARs) reduce the requirement for line of sight communications⁷. Security technology makes all of these transmissions increasingly invulnerable to interception and jamming. All of these advances make communications increasingly efficient, numerous, and complex. To meet this demand, the Army Battle Command System (ABCS) and similar joint systems use powerful arrays of computers to sort, analyze, store, and display information and generate useful intelligence. These systems have the potential to enhance the commander's ability to execute his command function, and his staff's ability to exercise control, provided that the reconnaissance system can generate timely and accurate information. Unfortunately, the constraints of distance and the requirement to move collection assets into position to collect data, limit the speed of collection. Even highly responsive systems, such as unmanned aerial vehicles (UAVs), that can instantly broadcast pictures to a commander, must physically get to the target. This friction increases when collection assets confront limitations caused by ground transportation, weather, human interaction, and the requirements of security and stealth. Clearly, the current state of the art shifted the limiting burden of time back to reconnaissance. This potential gap in the C4ISR system requires an evaluation of current and projected reconnaissance and surveillance doctrine. To focus that research, this monograph will use the criteria discussed in the following section.

⁷ The EPLARs digital radio uses routers to create a network of systems. If a message can not be passed directly by line-of-sight, it is relayed around the system until it finds a path to the receiver. This capability has the potential to enhance effective transmission distances. Williamson, John ed. Janes Military Communications, Twenty-Second edition 2001-2002 (Janes Information Group Inc.: Alexandria Va, 2001), 759-760.

Research Criteria

This paper assesses the nature of operational reconnaissance in terms of its ability to gain reconnaissance superiority in multiple dimensions of conflict (land, air, space, electronic, etc.), to generate tempo, and to transition from one operation to the next. The criteria are derived from essential attributes defined in the Operational and Organizational plan for the Objective force.

The first criteria address doctrines' ability to establish reconnaissance superiority across multiple dimensions of conflict. As discussed above, this is a necessary prerequisite for attaining dominant situational understanding and for maximizing the capabilities of the C4ISR system. This criterion examines the ability to use the various dimensions of the battlefield to collect intelligence (reconnaissance) and the ability to deny (security) these dimensions to the enemy.⁸

The second criteria, generating tempo, is derived from the basic premise of information dominance. By seeing first, understanding first, and acting first, you can get inside the enemy's decision cycle and retain the initiative. Further, a high rate of operational tempo allows you to execute a series of blows from which the enemy never has time to recover.⁹

The final criterion, the ability to transition from one operation to the next, has several facets. It assesses the ability of doctrine to support operations across the full spectrum of operations (Offense, Defense, stability, and Support) and to transition from one to another.¹⁰ It also assesses the capability of operational commanders to resource both the needs of current operations and to begin reconnaissance in support of future operations.

These three criteria serve to focus the search for relevant information in the examination of current doctrine, emerging, and historical doctrine.

⁸ US Army. United States Army White Paper: Concepts for the Objective Force (Washington D.C.: Department of the Army) available from <http://www.objectiveforce.army.mil/pages/objectiveforcewhitepaper.pdf>; internet; accessed 23 OCT 02, 1.

⁹ Ibid, 4-5, 8.

¹⁰ Ibid, 4.

CHAPTER TWO

CURRENT DOCTRINE

This chapter will demonstrate that the doctrinal discussion of reconnaissance in the U.S. Army's keystone manual *FM 3-0, Operations* and its subordinate manuals, is shallow, rife with inconsistent and unhelpful definitions, and is rooted almost exclusively at the tactical level of war. When compared to the demands that futurists are laying on the C4ISR system, it becomes obvious that there is a widening gap in our reconnaissance doctrine. This gap is primarily at the operational level of war, and must be closed to realize the potential of information dominance. This chapter will examine current army doctrine to assess its relative merit. This will lay the foundation for a discussion of future force concepts in the next chapter. This comparison will demonstrate a disconnect in the two bodies of thought.

Review of Current Doctrine

Unfortunately, there is no single source document that describes the reconnaissance system. Instead, U.S. Army doctrine resides in a hierarchy of manuals that begins with *FM 3-0, Operations*, and continues with a dizzying array of subordinate manuals targeted at both echelon and battlefield operating system (BOS). *FM 3-0* describes how the Army envisions itself executing combat operations at the operational level of war. *FM 3-90, Tactics*, does the same thing at the tactical level. Manuals such as *FM 100-15, Corps Operations* and *FM 71-100, Division Operations* describe each echelon of command in greater detail. Doctrine is further reduced to the specifics of the various battlefield operating systems in manuals such as *FM 17-95, Cavalry Operations*, *FM 5-170, Engineer Reconnaissance*, *FM 3-19, NBC Reconnaissance*, and *FM 34-1, Intelligence and Electronic Warfare Operations*. Finally, the Army captures all of the

relevant doctrinal terms in its dictionary, *FM 1-02, Operational Terms and Graphics*¹¹. Clearly information on reconnaissance is available, if you look for it.

The dispersal of thought on reconnaissance throughout the Army's literature poses several problems. First, it is difficult to find what you need. This makes it difficult to train and execute reconnaissance and leads to greater confusion rather than common understanding. The Army's doctrine writing process exacerbates this problem. Every time the concepts in the Keystone manual are updated (every 5-10 years), a ripple effect occurs as subordinate manuals are updated. The resulting lag in publication time results in inconsistencies that cloud understanding. The problem becomes even murkier as branch parochialism sets in. The armor branch has a distinct cavalry bias in its writings, which lean toward fighting for information and a bottom-up approach (tactical units feeding information to higher commanders).¹² The intelligence branch focuses on electronic surveillance and takes an increasingly top-down approach (higher echelons passing intelligence to subordinate tactical commands).¹³ Not surprisingly, the special operations community tends toward reconnaissance by stealth¹⁴. All three of these trends leave us with a reconnaissance doctrine dispersed over a variety of sources, inconsistently developed, and often contradictory. The following sections provide specific examples of shallow, inconsistent, and confusing thought.

A problem of definitions

The first serious problem with current army reconnaissance doctrine is one of definitions. The vocabulary often has both official definitions, as laid out in *FM 101-5-1, Operational Terms*

¹¹ FM 1-02 Operational Terms and Symbols will replace the old FM 101-5-1. At the time of writing FM 1-02 is still in final draft form and not approved doctrine. Regardless, the text relevant to this monograph is the same in both documents.

¹² US Army. FM 17-95, Cavalry Operations (Washington D.C.: Department of the Army December 1996), 3-2.

¹³ US Army. FM 34-1, Intelligence and Electronic Warfare Operations (Washington D.C.: Department of the Army, September 1994), 1-1 to 1-3.

and Graphics, and a variety of other common meanings which make their way into the manuals. Words such as cavalry, security, intelligence, information, surveillance, and most importantly reconnaissance, mean many different things depending on the context in which they are used.

The definition of reconnaissance is a logical starting point. The official definition is, “a mission undertaken to obtain, by visual observation or other detection methods, information about the activities and resources of an enemy or potential enemy, or to secure data concerning the meteorological, hydrographic, or geographic characteristics of a particular area.”¹⁵ There are several problems with this definition.

The first is the assertion that reconnaissance is a mission. This claim leads to confusion. A mission is a “ task, together with a purpose, that clearly indicates the action to be taken and the reason therefore.”¹⁶ Reconnaissance only entails obtaining the information. It does not have an inherent purpose. It becomes a mission only when linked to a commander’s information requirement that drives a commander’s decision making process. Therefore, reconnaissance is more precisely a task and not a mission. This is more than a game of semantics. Every military organization has the capability to collect relevant information as they carry out their assigned missions. This inherent requirement to conduct reconnaissance is an implied task to all units. However, some units do exist primarily to execute the reconnaissance task, which leads to another problem with the definition.

The second problem is a failure to recognize the adjective form of the word. In common use, reconnaissance describes organizations optimized to execute the task of obtaining information, such as a reconnaissance platoon, or a brigade reconnaissance troop. However, the

¹⁴ US Army, FM 31-20-5, Special Reconnaissance TTP for Special Forces. (Washington D.C.: Department of the Army, March 1993), 1-1 to 1-5.

¹⁵ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001), 11-10.

¹⁶ US Army. FM 101-5-1, Operational Terms and Graphics (Washington D.C.: Department of the Army, September 1997), 1-102.

words cavalry and scout, neither of which have a definition in *FM101-5-1*, describe the same thing. There are also organizations that collect information, which are described as surveillance units. The problem is that each of these terms has a connotation associated with it. For example, cavalry units tend to have high mobility and the capability to fight for information.

Reconnaissance units have significantly less armor and require stealth. Surveillance implies a degree of secrecy and permanence as well as technology. As branch parochialism and tradition color our vocabulary, the term reconnaissance increasingly means many different things to different people.

A third source of confusion is the distinction the official definition makes between “visual observation” and “other detection means.” No where does *FM 101-5-1* identify what these other “means” might be. The reader can assume methods like radio intercept, target acquisition radar, or satellite imagery would fall into the category of “other means.” However, all of these means are specifically included in the definition of surveillance. Surveillance, according to *FM 3-0*, is the “systematic observation of aerospace, surface or subsurface areas, places, persons, or things by visual, aural, electronic, photographic or other means.”¹⁷ This definition confronts us with those “other means” again. What other means? Reconnaissance? The reader could draw one of three conclusions; surveillance is a subset of reconnaissance, reconnaissance is a subset of surveillance, or reconnaissance and surveillance are essentially the same thing – a task carried out to obtain information. Regardless of your interpretation, the potential for confusion exists.

A final source of confusion is the definition’s lack of completeness. The definition limits reconnaissance to “enemy or potential enemy, or meteorological, hydrographic, or geographic aspects of an area.” In the context of full spectrum operations, where stability operations and support operations exist along side their brothers offense and defense, it is probable that units will

¹⁷ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001), 11-9.

need information on a range of organizations other than the enemy. Local governments, neutral organizations, refugees, and private companies are all potential sources of information in the full spectrum world. These could shelter neatly under the umbrella of geography, but probably deserve more attention than the current definition provides.

The confusion caused by the inadequate definitions of reconnaissance and surveillance is evident in the text of *FM 3-0* itself. For example, the opening sentence on the discussion of reconnaissance claims that “reconnaissance collects information and can validate current intelligence or predictions.”¹⁸ Reconnaissance does not collect information, units conduct reconnaissance to collect information. Alternately, a unit could conduct surveillance to collect information. Later, *FM 3-0* claims that “Reconnaissance elements may have to fight for information. However, the purpose of reconnaissance is to gain information through stealth.”¹⁹ This statement clashes with *FM 17-98, Cavalry Operations*, which clearly identifies two contrasting methods, reconnaissance by stealth and fighting for information or combat reconnaissance.²⁰ The purpose of reconnaissance is not to be stealthy; it is to get the required information. What *FM 3-0* should claim is that the preferred method of conducting reconnaissance is by stealth, thereby preventing the unit from becoming decisively engaged. If that is true however, we again stumble across a mixed message. In the preceding paragraph *FM 3-0* claimed that “continuous and aggressive reconnaissance does more than collect information. It may also produce effects or prompt enemy actions.”²¹ The text goes on to describe the potential value of forcing the enemy to commit assets to counter-reconnaissance or change his

¹⁸ Ibid, 11-9.

¹⁹ Ibid, 11-10.

²⁰ US Army. *FM 17-95, Cavalry Operations* (Washington D.C.: Department of the Army December 1996), 3-2.

²¹ US Army. *FM 3-0, Operations* (Washington D.C.: Department of the Army, June 2001), 11-10.

plan based on friendly reconnaissance activities. This is clearly an argument in favor of fighting for information.

FM 3-90, Tactics does nothing to clarify the situation. It claims that “reconnaissance primarily relies on the human dynamic rather than technical means.”²² Why is this distinction important? Does it imply that surveillance employs primarily technical rather than human means? *FM 3-90* later claims that “surveillance provides information while reconnaissance answers the commander’s specific questions.”²³ This implies that what the human element adds to reconnaissance is the ability to translate information into intelligence. This is inconsistent with the definition in *FM 3-0*. A better reason for addressing the human dynamic is the ability of humans to interact with the environment and the enemy – to fight for information. *FM 3-90*, published after *FM 3-0*, does nothing to clarify poorly articulated definitions in *FM 3-0*.

Army doctrine desperately needs better definitions. From the discussion above, reworked definitions follow, and will be used throughout the rest of the paper. Reconnaissance is a task undertaken to collect information about an enemy, location, or neutral organization either by surveillance or by combat. Surveillance is the collection of information using technological collection systems or by stealth to avoid becoming engaged with the enemy. Combat is the final form of reconnaissance and may take the form of a reconnaissance in force, movement to contact, raid, or patrol. By defining surveillance as the passive component of reconnaissance, we face another question. Should ISR stand for Intelligence, Surveillance and Reconnaissance, or should it describe Intelligence, Security, and Reconnaissance?

²² US Army. *FM 3-90, Tactics* (Washington D.C.: Department of the Army, July 2001), 13-0.

²³ *Ibid*, 13-7.

Reconnaissance and Surveillance vs. Reconnaissance and Security

FM 3-0 describes the Intelligence, Surveillance, and Reconnaissance system (ISR) as one of the three components required to gain information superiority. As discussed above, the current definitions of reconnaissance and surveillance are almost indistinguishable, making the concept of ISR inherently redundant. The concept behind the acronym is an important one however, and we should not dismiss it too quickly. The ISR system describes the process of collecting raw information, analyzing it, and producing the intelligence required to meet the decision making requirements of the commander. Rather than suggest dropping the surveillance as a redundant appendage, leaving us with simply an IR system, it is possible that the term surveillance should make way for the inclusion of security. This section will demonstrate that doing so will strengthen doctrines' ability to meet the needs of our first criteria, establishing reconnaissance superiority across multiple dimensions.

Security is defined as “measures taken by a military unit to protect itself against all acts designed to impair its effectiveness.”²⁴ Unfortunately, this definition is vague and could encompass all manner of activities such as arms room security or computer security. These activities are better described as defensive information operations. A more useful definition is the one for security operations. Security operations are “undertaken by a commander to provide early and accurate warning of enemy operations, to provide the force being protected with time and maneuver space within which to react to the enemy, and to develop the situation to allow the commander to effectively use the protected force.”²⁵ Security operations take the forms of screen, guard, cover, and rear area security, and include the task of counter-reconnaissance.²⁶ Including security operations in the ISR system does several things to strengthen the ISR concept.

²⁴ US Army. *FM 101-5-1, Operational Terms and Graphics* (Washington D.C.: Department of the Army, September 1997), 1-144.

²⁵ *Ibid*, 1-145.

²⁶ *Ibid*, 1-145.

First, it introduces the requirement to conduct counter-reconnaissance. A central tenet of information superiority is, it is not about how much you know, but about how much more you know than the enemy does.²⁷ If your reconnaissance efforts attain one hundred percent accurate and timely information about the enemy, it will certainly lead to a good intelligence picture upon which to base decision making. However, if you do nothing to prevent the enemy from achieving a perfect awareness of friendly forces, then neither side can gain a significant advantage. On the other hand, if security operations defeat the enemy reconnaissance thereby limiting the intelligence input into his command system, an exploitable window of opportunity opens. The goal then is to both collect information through reconnaissance and to protect information through security. This achieves the requirements of our first criteria, gaining reconnaissance superiority.

A second advantage of replacing surveillance with security is an added emphasis on security operations. *FM 3-0's* coverage of security is limited at best. There is no dedicated section in the manual to describe how security operations shape the operational commanders fight. Further, any references to the forms of security operations are scattered throughout the text and add little to the discussion. The relevant discussion exists solely on the tactical level and resides in *FM 3-90 Tactics*. Suppressing the relevance of security operations to the tactical level of war may be appropriate for current doctrine. As this monograph will discuss later when it addresses emerging doctrine, security operations will become increasingly central to the operational level of war.

A third advantage of stressing security operations is introducing the tension between reconnaissance and security. Like the tension between offense and defense, reconnaissance and security have both complementary and competing characteristics. Just as the counterattack is an

²⁷ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001), fig 11-2.

integral part of defense, reconnaissance is a part of every security operation.²⁸ The tension arises in the competition for requirements and capabilities to execute the two tasks. A system optimized to conduct long range covert reconnaissance may have little utility in executing a high intensity covering force operation. This challenges force developers to determine the correct mix of capabilities and creates a dilemma between optimizing units to perform at either end of the recon-security spectrum, or to create units that are jacks of all trades and masters of nothing. Current doctrine focuses on reconnaissance, and more specifically, reconnaissance by stealth. The emphasis on surveillance is driving force development to optimize at one extreme of the continuum. As the monograph examines the requirements of future force concepts later in this chapter, it will find that this specialization may be misguided. Adding security to the ISR trio will reinforce the dynamic relationship between reconnaissance and security in meeting the intelligence needs of the commander. Again this will strengthen doctrines ability to gain reconnaissance superiority not just at the electronic surveillance end of the spectrum, but across multiple dimensions.

To review, this section demonstrated that current doctrine has some significant shortcomings. Its definitions are imprecise and lead to confusion. They fail to account adequately for the two forms of reconnaissance, surveillance and combat. The concept of ISR further confuses the issue by omitting security operations as a fundamental part of gaining and maintaining information superiority. This omission may contribute to an unhealthy optimization of capabilities and organizations to conduct stealthy reconnaissance at the expense of combat capabilities required in security operations. The result is a doctrine that does not have the proper vocabulary to meet the demands of establishing reconnaissance superiority. The next section will continue this theme by examining reconnaissance in relationship to the levels of war.

²⁸ US Army. FM 17-95, Cavalry Operations. (Washington D.C.: Department of the Army December 1996), 4-3.

Operational Reconnaissance Defined

Current army doctrine fails to distinguish a difference between tactical, operational, and strategic reconnaissance. This omission may limit the way we think about and employ reconnaissance organizations. This section will examine aspects of all three of our criteria. It will answer several questions. Do commanders at the various levels of war require different means to establish reconnaissance superiority? Do commanders have different information requirements as they transition from one operation to the next? Do commanders at different levels operate at different tempos? The answers to these questions are critical to the search for a theory of operational reconnaissance.

Doctrine draws the distinction between levels of war for other military functions. For example, doctrine recognizes a difference between operational fires and tactical fires, strategic mobility and tactical mobility, operational command and tactical command.²⁹ In each of these cases, there is an argument that the nature of the functions changes as you move from one level of war to the next. This leads to the obvious question, “is there a distinct difference between reconnaissance at the various levels?” Several arguments to the affirmative present themselves and will be demonstrated in this section. First, joint doctrine recognizes levels of ISR. Second, army doctrine recognizes levels of intelligence. Finally, the varied nature and time horizon of decisions drive fundamentally different reconnaissance needs. An examination of each argument will clarify the requirement for levels of reconnaissance.

The very fact that joint doctrine recognizes a distinction between levels of reconnaissance is the simplest argument for modifying Army doctrine. However, the need goes beyond a desire to align things in a tightly nested package. Joint doctrine draws clear distinctions between the focus of reconnaissance at each level. Strategic ISR identifies potential threat nations, assesses their warmaking capability, and informs planning for nuclear and conventional operations and the

²⁹ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001), 4-4 to 4-5, 4-6 to 4-7; US Army. FM 101-5-1, Operational Terms and Graphics (Washington D.C.: Department of the Army, September 1997) 115,116,159, 164.

Joint Strategic Capabilities Plan (JSCP). Operational ISR provides indications and warnings of attack, evaluates threat order of battle and centers of gravity, informs campaign planning and assesses the effectiveness of military campaigns. Tactical ISR provides the detailed and often near real time information on terrain, enemy dispositions, and capabilities required to employ forces, support targeting, and commit scarce assets.³⁰ It is important to note that a single piece of information or a single collection asset may have utility in all three levels. However, the focus at each level is substantially different. The Army's intelligence doctrine serves to clarify the point.

FM34-1, Intelligence and Electronic Warfare Operations recognizes a distinction between the strategic, operational, and tactical levels of intelligence. Strategic intelligence supports national policy and military plans and concentrates on the national political, economic, military and infrastructure considerations of other nations. Operational intelligence supports friendly campaign planning by identifying enemy courses of action and limits its focus to the theater of operations and the needs of commanders primarily from theater to corps. Tactical intelligence supports the conduct of battles and engagements conducted at echelons below corps. Tactical intelligence is usually perishable and has an immediate influence on current operations.³¹ Interestingly, in the same discussion, *FM 34-1* claims "advances in technology and the requirements of the modern battlefield also make the demarcation between strategic, operational, and tactical intelligence resources indistinguishable. Collection assets which normally support strategic intelligence can and often are tasked to support operational and tactical intelligence requirements."³² This claim is reasonable for many of the technology based surveillance systems residing in the intelligence community. Satellite imagery, signals intercept, unmanned aerial

³⁰ Joint doctrine refers to the reconnaissance, surveillance, and target acquisition system (RSTA) rather than the Army's ISR. U.S. Department of Defense. *Joint Pub 3-55: Doctrine for Reconnaissance, Surveillance, and Target Acquisition Support for Joint Operations (RSTA)* (Washington D.C.: Department of Defense, 1993), I-1 to I-4.

³¹ US Army. *FM 34-1, Intelligence and Electronic Warfare Operations* (Washington D.C.: Department of the Army, September 1994), 2-2 to 2-3.

³² Ibid 2-3.

vehicles (UAV) and the like can switch roles because of their significant reach and responsiveness. The claim breaks down when commanders at various levels have competing demands for the same scarce resources. While a UAV could support any level of command, its ability to support the information needs of the strategic, operational, and multiple tactical commanders simultaneously will probably be limited to rare circumstances. Further, human based reconnaissance such as cavalry, Special Forces, and interrogators have a much tighter link to their immediate commander. Logistics requirements, the restrictions of terrain and movement times, as well as proximity to enemy action all conspire against the rapid retasking of human based reconnaissance. Two important ideas emerge from this discussion; the information required to support each level of war is different, and the assets used for collection have varied utility depending on the level at which they are applied. This recognition of varied capabilities and time horizons deserves further exploration.

The nature of information requirements, the time horizon required to collect, and the perishability of information is markedly different at each level of war.³³ At the strategic level, national policy and military capabilities, technology, and doctrine develop over extended periods. Details are often not as important as trends. Strategic collection occurs primarily during periods of peace and requires covert means of reconnaissance to detect. Once identified, the information tends to retain its relevance. At the opposite extreme, the tactical commander requires near real time information on specific details of enemy and terrain. His information is usually a result of ongoing operations, and information has a short window of utility. The tempo of operations has the potential to limit the ability to use covert means of collection. Clearly the strategic and tactical commanders may have to achieve reconnaissance superiority in different dimensions. The strategic commander may put a premium on space and electromagnetic dimensions. Tactical

³³ Simpkin, Richard E, Race to the Swift: Thought on Twenty-First Century Warfare (London: Brassey's, 1985), 203-204.

commanders may have to dominate ground reconnaissance in order to maintain tempo. Not surprisingly, the operational commander faces a blend of the advantages and disadvantages of his strategic and tactical counterparts. Initial operations will benefit from collection and planning conducted during extended periods of peace. As operations continue, the results of tactical actions will increasingly determine his available information. Only by adequately predicting future information requirements will the operational commander be able to employ human based collection assets to meet both current requirements and to transition to future operations. The tension that time places between information requirements and collection assets, argues for a discussion of levels of reconnaissance in Army doctrine.

FM 3-0 fails to address adequately the varied intelligence requirements of commanders at the three levels of war. Further, it fails to recognize that reconnaissance methods and capabilities should adjust to meet the different focus of those commanders. The failure to recognize concepts that have precedent in both joint and army doctrines results in *FM 3-0* diluting the importance of reconnaissance. Recognizing the levels of reconnaissance in our doctrine is a necessary first step in creating ISR systems that allow commanders at all levels to gain reconnaissance superiority, maintain the tempo of their operations, and to transition across the spectrum of operations.

Summary

Current Army doctrine as expressed in *FM 3-0* fails to sufficiently address the subject of reconnaissance. It is plagued with inadequate, vague, and contradictory definitions. It fails to discuss security operations as a necessary adjunct of reconnaissance in obtaining information superiority. Further, it does not recognize that the demands of information, reconnaissance, and security are markedly different for commanders at each level of war. These flaws in current doctrine become even more apparent in the next chapter, as future force concepts modify existing reconnaissance doctrine.

CHAPTER THREE

FUTURE FORCE CONCEPTS

While *FM 3-0* focuses primarily on current doctrine, it also projects into the near future and introduces emerging concepts. The Army's experiments with digitization in the 1990s and the ongoing development of both the Striker Brigade and Objective Force concepts build on *FM 3-0* and add additional demands. A final input to change is a reassessment of the threat environment as expressed in the Contemporary Operating Environment (COE). All of this change necessitates an evaluation of emerging concepts to see if they meet the challenges of the future. In this chapter, we will examine several concepts focusing on the ability of existing reconnaissance doctrine to support them. These concepts include maneuver out of contact, force projection, and transitions in full spectrum operations. This examination will reveal the inadequacy of future force concepts to address reconnaissance at the operational level.

Maneuver out of contact

FM 3.0 introduces the concept of maneuver out of contact in the offensive chapter. In a discussion on the impact of technology. It claims:

Situational understanding based on an accurate common operational picture changes the nature of maneuver before and during attacks. With it, Army forces depend less on movements to contact and meeting engagements to create the conditions to attack. Modernized Army forces may avoid movements to contact altogether, developing the situation largely out of contact. Advanced surveillance and reconnaissance assets refine the picture of the enemy, while precision fires and information operations destroy enemy cohesion. Reconnaissance and security elements maintain contact only as required to collect information that unmanned sensors cannot. Commanders maneuver forces into position to begin the attack before major forces make contact.³⁴

This theme resonates throughout future concept documents as well. The US Army White Paper on objective force concepts state that the "hallmark of Objective Force operations will be

³⁴ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001), 7-28.

developing situations out of contact.”³⁵ The operational and organizational plans for the Striker Brigade and Unit of Action use similar verbiage.³⁶ In all cases, this new capability is a direct result of a potential increase in information dominance based largely on passive surveillance systems.

Unfortunately, none of the documents recognize that several conditions, other than ISR superiority, must exist to achieve maneuver out of contact. First, the battlespace must have sufficient depth to generate stand off - there must be room to maneuver the force. If the enemy, or political considerations limit the scope of the battlespace, maneuver out of contact may not be an option. For example, complex and urban terrain both provide a determined enemy with the tools to shrink the battlefield. When political goals necessitate accomplishing military objectives in that terrain, the advantages of standoff diminish rapidly.³⁷

The requirement to project combat power poses the same challenges. If aerial and seaports are located in friendly areas of the theater of operations there is no real issue. But if forced entry is required, seizing an aerial or seaport immediately places friendly forces in contact. By definition, this precludes the option of maneuvering out of contact until the entry force can expand its battlespace.³⁸ Battlespace becomes a condition that is necessary condition to achieve maneuver out of contact.

Assuming that the force does have room to maneuver, it must also have a relative mobility advantage over the enemy. If the maneuver force can not move faster than the enemy, it can never hope to reposition in time to take advantage of the opportunities identified by its ISR

³⁵ US Army. United States Army White Paper: Concepts for the Objective Force (Washington D.C.: Department of the Army; available from <http://www.objectiveforce.army.mil/pages/objectiveforcewhitepaper.pdf>; internet; accessed 23 Oct 02), v.

³⁶ US Army. TRADOC Pamphlet 525-3-90/O&O: The United States Army Objective Force, Operational and Organizational Plan for Maneuver Unit of Action. (Fort Monroe, Va: U.S. Army Training and Doctrine Command, 22 July 2002), 11.

³⁷ Wass de Czege, Huba. “Toward a Future Army” (28 September 2002), 20.

³⁸ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001) 3-16 to 3-17.

system. This movement rate is more than just the physical speed of weapon systems and soldiers. It includes the time it takes to collect information, create plans, issue orders, organize logistics support, and execute necessary movements.³⁹ An enemy limited to the speed of the human foot, empowered by a flexible command structure, unencumbered by a burdensome logistics tail, and operating on complex terrain with a sympathetic population could easily generate more tempo than a mechanized force which is degraded by friction in all those aspects. No amount of information will free you from an enemy that can generate a consistently higher tempo.⁴⁰ Mobility advantage is a second requirement for maneuver out of contact.

Finally, in order to maneuver out of contact, it is not sufficient just to avoid making contact with your main force. You must keep the enemy from making contact with you. The enemy does get a vote. Once again, the requirement for security operations becomes obvious, reinforcing the argument to include it in the ISR trinity. Without a sufficient security and counter reconnaissance effort, you can not hope to keep your maneuver hidden from the enemy. This necessitates some form of contact beyond merely reconnaissance and surveillance. “It will require an active effort to disrupt and degrade the enemy’s ability to locate and target our own forces, and to retard his reaction to their operations until the information on which it is based is no longer relevant.”⁴¹ It demands that commanders gain reconnaissance superiority not just in the air and electromagnetic spectrums, but also on the ground.

To summarize, superior ISR based primarily on reconnaissance and surveillance is not a sufficient condition to conduct maneuver out of contact. To execute this brand of precision

³⁹ Simpkin, Richard E, Race to the Swift: Thought on Twenty-First Century Warfare (London: Brassey’s, 1985), 263-268.

⁴⁰ Leonhard, Robert R. Fighting by Minutes: Time and the Art of War (Westport, Connecticut: Praeger, 1994), 69-90.

⁴¹ Sinnreich, Richard Hart, and Hba Wass de Czege, Conceptual Foundations of a Transformed U.S. Army (The Institute of Land Warfare, Association of the United States Army: Arlington, Virginia, March 2002) 19.

maneuver requires three additional components. There must be adequate battlespace to move forces. The force must have a relative mobility advantage over the opponent. Finally, the force must conduct security operations to deny enemy knowledge of the maneuver. The likelihood of all of these conditions existing is questionable. Doctrine and force structure need to account for a situation where maneuver out of contact is not an option. The next section examines one such situation.

Force Projection

To protect the interests of the United States, the U.S. Military must be prepared to project power worldwide. This requirement presents unique challenges not presented to a military designed primarily to protect the borders and infrastructure of its homeland. The first operational challenge will usually be introducing combat power into theater. Objective force concepts recognize this dilemma.

Objective Force units will conduct operational maneuver from strategic distances, creating diverse manifold dilemmas for our adversaries by arriving at multiple points of entry, improved and unimproved. As necessary, Objective force units conduct forcible entry, overwhelm aggressor anti-access capabilities, and rapidly impose our will on our opponents.⁴²

This initial operation fits nicely with the maneuver out of contact paradigm. Intelligence based primarily on surveillance systems and special reconnaissance enables the force to maneuver from sanctuary into contact. Because the attacker dictates the time of the attack, he can also dictate the tempo of the collection effort. Certainly political constraints will have an effect, but the commander can afford to wait until information superiority exists. This case meets all the additional conditions we added previously. ISR creates a picture of the objective. The battlespace has sufficient depth based on strategic distance. Strategic lift assets and the choice of timing provide the mobility advantage. Finally, geographic separation provides a degree of

⁴² US Army. United States Army White Paper: Concepts for the Objective Force (Washington D.C.: Department of the Army; available from <http://www.objectiveforce.army.mil/pages/objectiveforcewhitepaper.pdf>; internet; accessed 23 Oct 02), iv.

security that prevents the need for a security force. The stage is set for a decisive maneuver. If this maneuver achieves the political objectives in a *coup de main*⁴³, then all is well. But what happens when the forced entry operation is only the first operation in a series that make up a campaign? Will doctrine and force structure allow a transition from one operation to another?

When the forced entry operation is just the opening act of the play, the operational commander must consider how to link one battle to the next. Now the commander finds himself in contact with the foe. His battlespace is limited to his air or beachhead, and his mobility advantage deteriorates, as the enemy becomes aware of the point of entry. The pace of operations is no longer his alone to dictate. He must do several things to prepare for the next fight. First, he has to update his situational understanding and ensure he retains reconnaissance superiority. This may have to be done at a tempo that is not conducive to stealthy collection. Fighting for information may be necessary. Second, he has to interpose security forces between the enemy and his main body.⁴⁴ This serves both to deny enemy information and to allow the main body to disengage from the enemy. Finally, he has to expand his battlespace to create conditions for resumed maneuver out of contact by the main body. These three actions necessitate doctrinal concepts and force structure capable of things markedly different than one geared primarily to the surveillance centric structure required for the forced entry operation. This burden is even greater in an operational environment that envisions self-contained organizations operating over a dispersed and noncontiguous battlefield.⁴⁵ Each commander will require his own organic ability to gain local reconnaissance superiority and to transition between operations.⁴⁶ We will continue to examine the tensions between reconnaissance and security as well as stealth and combat

⁴³ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001) 3-16.

⁴⁴ Wass de Czege, Huba. "Toward a Future Army" (28 September 2002), 45-46.

⁴⁵ Miksche, F. O. Attack: A Study of Blitzkrieg Tactics (New York: Random House, 1942), 62.

⁴⁶ Sinnreich, Richard Hart, and Hba Wass de Czege. Conceptual Foundations of a Transformed U.S. Army (The Institute of Land Warfare, Association of the United States Army: Arlington, Virginia, March 2002) 26-27.

reconnaissance in later chapters. But first we should address the challenges of full spectrum operations.

ISR in Full Spectrum Operations

So far, our discussion addressed primarily offensive and defensive operations. While the challenges of attaining information in combat operations may be riskier, the effort is equally important in stability operations and support operations. Full spectrum operations, as presented in *FM 3-0*, recognizes that Army forces may have to rapidly transition from any of the four operations (offense, defense, stability, or support) and will in all probability have to execute several of them simultaneously.⁴⁷ The nature of stability operations and support operations pose challenges to a surveillance centric ISR system designed to facilitate maneuver out of contact. Among these are the nature of the intelligence required, the proximity of forces, and the tempo of operations.

Information requirements in support of combat operations focus primarily on weapon systems and terrain. Where is the enemy combined arms reserve? Where is the enemy artillery group? Is the bridge over river X intact? These types of information lend themselves to collection by electronic surveillance. Satellite and UAV imagery can answer most terrain questions. Aerial and ground surveillance radar can pick up moving target indicators of enemy formations. Counterbattery radar locates enemy artillery. Given access to the correct assets, the operational commander can develop a reasonable picture of the battlefield. But what happens when the nature of the information switches from systems to attitudes, from terrain to intentions?

In stability operations and support operations, information requirements become increasingly concerned with human factors.⁴⁸ What does faction X feel about faction Y? Is policy Z reducing tensions in the disputed zone? Who is the de facto mayor of a city? Questions such as these do

⁴⁷ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001), 1-14 to 1-17.

⁴⁸ Ibid, 9-5.

not lend themselves to electronic surveillance. They require collection by human based collection assets in close and continuous proximity to the population, and potentially the enemy.⁴⁹

The close proximity to both neutral and potentially hostile forces provides a challenge to operational and tactical commanders. As units disperse across the battlespace and make contact with the population to optimize their effectiveness in stability operations, they become vulnerable if the situation requires a transition to offensive and defensive operations. Military formations must have the capability to rapidly break contact, secure themselves, and rapidly develop the situation to achieve maneuver out of contact as envisioned by future force concepts.⁵⁰

Two lessons are apparent from this discussion. First, commanders need to be able to gain reconnaissance superiority in a variety of dimensions. Dominating the electronic or aerial spectrum may not be adequate if human intelligence (HUMINT) is incapable of gathering intelligence on the ground. ISR systems must be flexible enough to transition among the full spectrum of operations. Second, commanders need the ability conduct security operations as they conduct the transition. Without the ability to deny a dimension to the enemy, commanders can not achieve reconnaissance superiority.

Summary

Future Force concepts present significant challenges to the operational commander that are not adequately addressed either in the concepts themselves, or in existing doctrine. The concept of maneuver out of contact fails to address the substantial security requirement that enables it. The challenge of force projection as a precursor to decisive operations necessitates an examination of the potential of conducting ISR in contact and in transitioning from one form of reconnaissance to another. Finally, the demands of full spectrum operations require a range of

⁴⁹ Ibid, 9-5.

⁵⁰ Sinnreich, Richard Hart, and Hba Wass de Czege, Conceptual Foundations of a Transformed U.S. Army (The Institute of Land Warfare, Association of the United States Army: Arlington, Virginia, March 2002) 28-29.

reconnaissance capabilities to ensure reconnaissance superiority, the requirement to execute in close proximity to the enemy, and to rapidly transition to security operations.

The Gaps in Reconnaissance Theory

The inadequacies of current doctrine and the demands of future concepts create a gap in our ability to describe the nature of reconnaissance. In the previous two chapters, we have quantified several aspects of this gap. First, it is apparent that our current definitions are inadequate. Second, reconnaissance cannot exist without its essential counterpart – security. Third, reconnaissance has different characteristics and focuses at the various levels of war – strategic, operational, and tactical. Fourth, maneuver out of contact demands some degree of security operations that may require combat. Fifth, force projection, as a precursor to decisive operations, requires the operational commander to execute in two substantially different operational environments. Finally, the demands of full spectrum operations limit the effectiveness of technologically based surveillance systems and demand a multi-disciplined approach to reconnaissance. To further refine these ideas, Chapter Four will examine two historical doctrines in an effort to distill any pertinent concepts that might refine out current doctrine into a useful theory of reconnaissance.

CHAPTER FOUR

REVISITING DOCTRINE OF THE PAST

Perpetually trapped in the middle of institutional experience and predictions of the future, doctrine must wait for the judgement of history to evaluate its success or failure. In the search for an appropriate theory of reconnaissance, it is useful to look at previous doctrines' treatment of the subject. In this chapter, we will look at two historical doctrinal documents. The first is the 1933, *German Army Regulation 300, Truppenfuhrung*, the German equivalent to FM 3.0.⁵¹ The second is the *Provisional Field Service Regulations for the Worker's and Peasants Red Army, 1936 (PU-36)*, which filled the same niche for the Soviets before Stalin's purges of the Red Army. These documents represent significant transformations in thought. German and Soviet theorists struggled with the lessons of WWI and a dizzying array of technologies introduced in that conflict and the interwar years. The remarkable success of both doctrines in predicting the future operational environment of their respective nations and the potential impact of technology suggests that they have utility in the search for a theory of reconnaissance.

TRUPPENFUHRUNG

A comparison of FM 3.0 and *Truppenfuhrung* reveals remarkable differences in the treatment of reconnaissance and security. FM 3.0 gives short shrift to both. It dedicates a scant nine paragraphs to the subjects and buries them deep in Chapter 11 of the manual.⁵² By contrast, *Truppenfuhrung* gives the topics primacy of place, with a full chapter on each and places them

⁵¹ *Truppenfuhrung* is the second generation of doctrine to emerge from the German Army after WWI. The first, codified in the 1921-23 in a two point volume *H.Dv.487 Fuhrung und Gefecht der Verbundenend Waffen*, is commonly referred to as "Das FuG. Das FuG was a result of the Seeckt reforms and captured the mobile warfare concepts developed during WWI in the form of defense in depth and infiltration tactics. *Truppenfuhrung* takes these fundamental concepts and mechanizes them. But more importantly it expands the concept of Auftragstaktik and institutionalizes it in the new German army. This combination of cultural and technical transformation based on a new operational concept, maneuver warfare, is central to the success of *Truppenfuhrung's* success. Condell and Zabeckis work is an English translation from the original German. Condell, Bruce and David T. Zabecki, Ed. On the German Art of War: Truppenfuhrung (London: Lynne Rienner Publishers, 2001), 1-12.

⁵² US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001), 11-9 to 11-10.

second only to the discussion of command. Indeed, the subject of reconnaissance and security receives more attention than any other subject in the manual to include the attack and the defense. The opening sentence of the Reconnaissance chapter is revealing. “Reconnaissance should produce a picture of the enemy situation as rapidly, completely, and reliably as possible. The results are the most important basis for the commander’s decisions and the deployment of the force.”⁵³ Clearly, the idea of a common operational picture is not entirely new, and German theorists recognized the essential role reconnaissance plays in both visualization and decision making. Additionally, the idea of information superiority is evident in German doctrine. The statement, “Reconnaissance superiority facilitates friendly missions and restricts those of the enemy,”⁵⁴ indicates that controlling information was critical to the German system. It appears that German doctrine has many similar concepts to current U.S thought. What then are the particulars of *Truppenfuhrung*’s reconnaissance and security theory?

Truppenfuhrung addresses many of the issues previously discussed in Chapters Two and Three. It addresses the tension between reconnaissance and security. It differentiates between operational and tactical reconnaissance. It recognizes the absolute requirement for multiple collection capabilities. Finally, it recognizes the necessity to conduct combat operations to both gain intelligence and deny it to the enemy. This section will examine each of these subjects in turn.

Reconnaissance vs Security

The tension between reconnaissance and security is evident throughout *Truppenfuhrung*’s two chapters on the subject. It recognizes that reconnaissance superiority has both an offensive

⁵³ Condell, Bruce and David T. Zabecki, Ed. On the German Art of War: Truppenfuhrung (London: Lynne Rienner Publishers, 2001), 39.

⁵⁴ Ibid, 39.

and defensive component that must be balanced. The following excerpt is typical of the discussion.

Good ground reconnaissance also contributes to good security. Conversely, the actions of a security unit produce a certain amount of reconnaissance. Reconnaissance and security on the ground complement one another and cannot be separated. Reconnaissance units must be able to orient themselves against the enemy and move freely over the ground. Security forces, on the other hand, are positioned locally by the units requiring security. In an exceptional situation, it may become necessary to assign a reconnaissance unit simultaneous missions of reconnaissance and security. Its priority of tasks must be specified in its orders.⁵⁵

This statement has several interesting components. First, is the idea that reconnaissance contributes to security, but can not replace it. A recognition that maneuver out of contact may be a risky proposition. Secondly, it recognizes the enemy focus of reconnaissance and the friendly focus of security. Because these two divergent foci compete, German doctrine drove its force structure toward specialized units optimized for either a security role or a reconnaissance roll.

Mechanized reconnaissance forces primarily executed reconnaissance, while cavalry and infantry did the bulk of security work.⁵⁶ In his work, *Achtung-Panzer!*, Heinz Guderian described the role of reconnaissance formations.

In combat the armored reconnaissance troops and detachments act mostly on the offensive, which is the best way to destroy the reconnaissance capability of the enemy and enhance our own. We should exploit any opportunities which arise to inflict damage on the enemy, as long as fighting can be combined with the primary mission of reconnaissance.⁵⁷

The doctrine recognized that organizations optimized for either reconnaissance or security suffer reduced efficiency if forced to execute both roles simultaneously. It warned against the employment of reconnaissance forces in security roles. “If reconnaissance units are committed to security missions in exceptional situations, they must be reinforced adequately. All commanders are responsible to ensure that reconnaissance effectiveness does not suffer from such a mission.”

⁵⁵ Ibid, 40.

⁵⁶ Ibid, 39-76.

⁵⁷ Guderian, Heinz. Achtung – Panzer! Translated by Christopher Duffy (London: Arms and Armor Press, 1992), 165.

The issue of balancing the requirements of reconnaissance and security has obvious implications for current force structure. Chapter five will elaborate on those implications. For now, we will return to a discussion on levels of reconnaissance.

Levels of Reconnaissance

Chapter 2 introduced the idea of levels of reconnaissance that coincide with the levels of war. *Truppenfuhrung* describes four types of reconnaissance: operational reconnaissance (operative Aufklärung), Tactical reconnaissance (taktische Aufklärung), Combat reconnaissance (gefechtsaufklärung), and Intelligence by special means. As we will see, these concepts do not have a one for one correlation with the current U.S concepts of strategic, operational, and tactical levels. However, they do indicate the need for such distinction in our doctrine.

According to *Truppenfuhrung*, operative aufklärung, or operational reconnaissance, is the basis for operational decision making.

“Operational reconnaissance encompasses the surveillance of the enemy’s concentration. It includes his movements by rail, his advances or withdrawal, the loading or unloading of army-level elements, the construction of field or permanent fortifications, and enemy air unit concentrations. The early detection of large enemy motorized units, especially those on open flanks, is critically important.”⁵⁸

The purpose of operational reconnaissance is to determine where enemy units are massing. Based on this information the commander makes decisions on conducting further reconnaissance and committing major formations. “The deployment of tactical reconnaissance elements, especially the determination of their main direction of effort, should be based upon the results of operational reconnaissance – provided this causes no unnecessary delays.”⁵⁹ Successful operational reconnaissance allows the operational commander to pick the battles he wants to fight and where to employ his units.

⁵⁸ Condell, Bruce and David T. Zabecki, Ed. *On the German Art of War: Truppenfuhrung* (London: Lynne Rienner Publishers, 2001), 44-45.

⁵⁹ Ibid, 45.

Tactical reconnaissance (taktische Aufklärung) provides the basis for the command and deployment of units.

“Tactical reconnaissance involves the detailed identification of the enemy’s assembly areas: his approach movements; his organization for combat; the width, depth, and direction of his deployment; his supply elements; his reserves; his air capabilities (especially new airfields); and his air defense assets.”⁶⁰

Tactical reconnaissance gives the information required to array forces against the enemy before the beginning of the engagement. When units make contact they execute combat reconnaissance.

Combat reconnaissance (gefechtsaufklärung) begins after contact and provides information to control the battle. All arms conduct reconnaissance as necessary to execute their particular battlefield function. For example, German doctrine would consider air reconnaissance in support of targeting and counter-battery fire as combat reconnaissance. Additionally personal reconnaissance by leaders at every echelon is an essential component of the German system. Interestingly, *Truppenfuhrung* addresses the issue of tempo in relationship to combat reconnaissance. “Combat reconnaissance takes time. Foresight, therefore, is essential to achieve the advantages of early execution and results. Thorough consideration must be given to the need for time in combat reconnaissance.”⁶¹ This cautionary statement recognizes the need to manage tempo, and supports the assertion that reconnaissance is a limiting factor in the efficiency of the C4ISR system.

Truppenfuhrung refers to one final category of reconnaissance, titled information by special means. The section discusses an array of topics including interrogation of prisoners, signals intercept, monitoring foreign press, and civilian sources. This category does not fall neatly into the framework of contemporary thought. Technology has added a considerable array of tools since 1933. Advances in signal intercept, satellite imagery, radar and the like add a host of “special means” to the arsenal. Many of these “special means” reside in national agencies and

⁶⁰ Ibid, 45.

⁶¹ Ibid, 51-53.

should be grouped under a heading of strategic reconnaissance. This is not a completely satisfactory solution however, as many of these means currently exist at operational and tactical levels as well.

Regardless of how neatly the German concepts mesh with our current framework, they indicate the need to recognize that commanders at various echelons have different kinds of decisions to make. Each commander may require significantly different systems to collect the needed information.⁶² Further, the idea that operational reconnaissance focuses the efforts of tactical reconnaissance indicates some requirement for sequential operations and the need to transition between them. To optimize tempo, commanders may need one organization to conduct the tactical and combat reconnaissance in support of a current fight, while another unit conducts operational reconnaissance in anticipation of a transition to future operations. We address this subject more in the discussion of Soviet doctrine later in the chapter. For now we will return to *Truppenfuhrung* and discuss the requirement for multiple collection capabilities and the requirement to fight for information.

Multidimensional reconnaissance.

Advances in technology at the turn of the 20th century added significant tools to a commander's ability to collect information. Photography, flight, radar, and a host of other innovations all added dimensions to reconnaissance well beyond the traditional ground based observation. *Truppenfuhrung* recognizes the benefits of a multidimensional approach to reconnaissance. "Different methods of reconnaissance supplement one another. The shortcomings of one method are compensated for by the strengths of the others."⁶³ The manual's discussion of ground versus aerial reconnaissance argues this point clearly.

⁶² Guderian, Heinz. Achtung – Panzer! Translated by Christopher Duffy (London: Arms and Armor Press, 1992), 163.

⁶³ Condell, Bruce and David T. Zabecki, Ed. *On the German Art of War: Truppenfuhrung* (London: Lynne Rienner Publishers, 2001), 42-43.

Ground reconnaissance normally cannot observe the enemy situation in depth. Aerial reconnaissance often identifies the most lucrative direction of action for ground reconnaissance. On the other hand, only ground reconnaissance can determine definitely whether or not the terrain is occupied by the enemy. Ground reconnaissance forces can provide information about enemy deployments through the interrogation of prisoners, the inspection of the dead, and other methods. Only ground forces can maintain continuous contact with the enemy; report on his activity, strength, composition, and combat effectiveness; and determine if chemicals contaminate the terrain. Ground reconnaissance forces also can produce results when air operations are not possible or are severely restricted by bad weather.⁶⁴

This type of comparison is useful when analyzing any of our current reconnaissance assets. For example, satellite imagery and unmanned aerial vehicles (UAVs) provide similar product, but the employment characteristics of each give them unique advantages and disadvantages. Satellites can observe enemy battlespace well behind enemy lines and are invulnerable to destruction by ground fire. UAVs, on the other hand, have a limited operating radius around their base station and are subject to hostile fire. The UAV does have the advantage of streaming video, dynamic retasking, and time on station. Working together, the two systems can mitigate the weaknesses of the others and create additional capability.

A commander that has multi-dimensional reconnaissance capabilities has a significant advantage over an opponent that does not. To achieve reconnaissance superiority, force structure should ensure that commanders at every level (strategic, operational, and tactical) have direct control over multiple sources of reconnaissance. Additionally, commanders must take steps to deny the enemies access to as many dimensions as possible. Air superiority is the obvious first step to gaining reconnaissance superiority.⁶⁵ Controlling space, dominating the electromagnetic spectrum and securing networks are additional security measures that lead to reconnaissance superiority. When the enemy reconnaissance system is limited to a single dimension and the

⁶⁴ Ibid, 42.

⁶⁵ Miksche, F. O. Attack: A Study of Blitzkrieg Tactics (New York: Random House, 1942), 24.

friendly system is empowered by the synergy of multiple dimensions, information superiority is the result.⁶⁶

One final point remains in our treatment of *Truppenfuhrung*. Successful reconnaissance may require units to fight for information. While this is not the preferred solution, it is a dimension of reconnaissance often ignored. *Truppenfuhrung* states that “reconnaissance units should avoid all unnecessary engagement with the enemy, except those required to drive the enemy off or to force the reconnaissance through.”⁶⁷ Interestingly, the amount of risk German doctrine was prepared to take goes up with the level of reconnaissance superiority they possessed.

“If friendly reconnaissance elements are forced to break through the enemy reconnaissance screen in order to accomplish their missions, they must assemble their forces quickly to push through with surprise. If the enemy has superiority, friendly reconnaissance may be accomplished through the use of skillful evasive measures.”⁶⁸

This statement indicates that given a degree of reconnaissance superiority, a commander can generate tempo by forcing his ground reconnaissance and risking contact with the enemy as he pushes them through. The use of combat reconnaissance is expressed in Major F. O. Miksche’s analysis of German blitzkrieg tactics written in 1942. In the discussion on the initial penetration of a shock division, Germans used tank battalions to form the reconnaissance echelon. Once a penetration was achieved and the main body had entered the depth of the enemy position, the pursuit phase was executed with motor-cycle and armored scout car battalions forming the reconnaissance echelon.⁶⁹ This transition of assets allows a commander to mitigate the risks of combat and still gain essential intelligence. This has implications for force structure in a doctrine that holds information dominance as a central tenet. At lower echelons, reconnaissance

⁶⁶ Wass de Czege, Huba. “Toward a Future Army” (28 September 2002), 13.

⁶⁷ Condell, Bruce and David T. Zabecki, Ed. On the German Art of War: Truppenfuhrung (London: Lynne Rienner Publishers, 2001), 47.

⁶⁸ Ibid, 39-40.

⁶⁹ Miksche, F. O. Attack: A Study of Blitzkreig Tactics (New York: Random House, 1942), 50-54.

organizations should be capable of combat and not simply stealth. Adding a combat component to reconnaissance structure increased the dimensions in a commander's arsenal.

Summary

Analysis of German inter-war theory as expressed in *Truppenfuhrung* provides significant insights and corroboration of ideas expressed in our emerging theory of reconnaissance. It emphasizes the importance of reconnaissance and security as a basis for conducting all other operations. It clarifies the nature of the relationship between reconnaissance and security. It provides support for the assertion that each level of war has a corresponding level of reconnaissance to support the unique decision making requirements of commanders at every level. It emphasizes the benefits of employing reconnaissance assets in multiple dimensions, and introduces the notion that security increases by denying dimensions to the enemy. Finally, it indicates that in an environment of reconnaissance superiority, increased tempo is possible by risking combat operations. Given the relevance of the main aspects of *Truppenfuhrung*, we will turn our attention to Soviet theory to see if it can further clarify our understanding of reconnaissance.

PU-36

Like its compatriot *Truppenfuhrung*, *Provisional Field Service Regulations for the Worker's and Peasants Red Army, 1936 (PU-36)* represents the codification of Soviet thinking into written doctrine. As such it represents the Soviet's attempt to transform its military following WWI and the Russian Revolution. Fueled by a vibrant intellectual debate in the interwar years, PU-36 encapsulates the ideas of brilliant Soviet thinkers to include V.K. Triandafillov, M.N. Tukhachevsky, and A.A. Svechin. Often sited as the beginning of operational cognizance, this period of debate produced a unique new theory of war to answer the Soviets unique strategic situation. PU-36 suffered the same fate as its creators at the hands of

Stalin before WWII. Unlike its author's however, the essence of *PU-36* found new life in the experience of the eastern front and has carried on into current Soviet doctrine. The relative success of Soviet Operational art in the second half of WWII suggests that *PU-36* has potential value in the understanding of reconnaissance.

The operational concept at the heart of *PU-36* is the principle of simultaneity.

The resources of modern defense technology enable one to deliver simultaneous strikes on the enemy tactical layer over the entire depth of his dispositions. There are now enhanced possibilities of rapid regrouping, of sudden turning movements, and of seizing the enemy's rear areas and thus getting astride his axis of withdrawal. In an attack, the enemy should be surrounded and completely destroyed.⁷⁰

The theory calls for fixing the enemy formation, penetrating it, inserting forces into the depth of the enemy formation to block retreat, and then initiating a relentless pursuit to annihilate him. To support this concept, Soviet reconnaissance concepts emerge in both parallel and divergent paths to *Truppenfuhrung*. This section will examine three aspects of the Soviet Theory. First, it will examine the heavy emphasis placed on fighting for information. Second, it will pursue the emergence of levels of reconnaissance. Finally, it will explore the issue of sequencing engagements. Collectively, these issues will further refine our evolving theory.

Fighting for information

Unlike what we have encountered so far in the examination of both FM 3.0 and *Truppenfuhrung*, *PU-36* does not seek to avoid fighting for information. Rather, it actively embraces the concept. The following extracts are typical.

Reconnaissance in force and ground reconnaissance provide the most reliable and detailed information on the enemy. Ground reconnaissance is carried out by specialist reconnaissance units, reconnaissance in force by units assigned for the purpose – and once battle is joined by all units.⁷¹

⁷⁰ This paper will use an English translation of the original Russian version of *PU-36* as found in Richard Simpkin's collection of material written by Soviet Authors. Simpkin, Richard. Deep Battle: The Brainchild of Marshal Tukhachevski (London: Brassey's Defence Publishers, 1987), 182.

⁷¹ Ibid, 186.

To obtain information on the enemy's order of battle, a systematic effort must be made to capture prisoners by offensive action by reconnaissance units, fighting patrols by night, and small-scale attacks.⁷²

Reconnaissance on main axes calls for good striking power⁷³

Throughout the manual, Soviet doctrine consistently calls for commanders to augment units assigned reconnaissance tasks with sufficient infantry, tank, artillery, and aerial support to accomplish the mission. Triandafilov's writings echo the point.

Cavalry reconnaissance will be even more difficult. It will be able to obtain more or less detailed information only after it has not only overrun the enemy cavalry, but the infantry units protecting it. Therefore, seriously organized reconnaissance in force must be conducted. Tasking individual cavalry troops to conduct reconnaissance does not promise results of an operational nature. Cavalry must employ regiments supported by powerful artillery and armored units to conduct reconnaissance.⁷⁴

It is clear that that Soviet commanders intended to fight for information. The reasons for embracing this path are less obvious.

Several potential reasons suggest themselves. First, PU-36 does a poor job of addressing the complex relationship of reconnaissance and security that we have discussed previously. The concepts of reconnaissance and security are both addressed in a single chapter entitled "Physical Security in the Field." The chapter centers almost exclusively on reconnaissance, with a scant four paragraphs on physical security. The two concepts appear almost merged in the text.

Physical security is concerned with protection troops against sudden enemy attack by aircraft, tanks, various kinds of landing or infiltration, chemical agents, cavalry and infantry. Conversely, it also supports friendly forces in attack and defense by maintaining uninterrupted contact with the enemy and reconnoitering his forces and resources.⁷⁵

⁷² Ibid, 187.

⁷³ Ibid, 187.

⁷⁴ Triandafilov, V.K. The Nature of the Operations of Modern Armies. Edited by Jacob W. Kipp (Essex, England: Frank Cass and CO. LTD, 1994), 45-51.

⁷⁵ Simpkin, Richard. Deep Battle: The Brainchild of Marshal Tukhachevski (London: Brassey's Defence Publishers, 1987), 183.

Because the Soviets make no distinction between reconnaissance and security, the combat power required to protect the force gets linked to that required for information gathering as single organizations are tasked to do both missions simultaneously.

A second potential explanation may be cultural. German theorists, working with the constrained resources imposed by the Treaty of Versailles, but empowered by a tradition of initiative in subordinates, chose a path that embraced multiple dimensions and minimal combat. Soviets, blessed with abundant manpower and resources, but traditionally hampered by the quality of its peasantry, proceeded down a path of dominating the dimension of ground reconnaissance through combat.⁷⁶

These two divergent approaches bring up an important question. If an adversary perceives that he can not achieve reconnaissance superiority in multiple dimensions, is it possible to optimize for ground reconnaissance and stretch the opponents security system to the breaking point? This possibility further enforces the requirement to consider security as an adjunct to reconnaissance in the overall ISR system. Reconnaissance organizations must be equipped to defend themselves and fight for information in a hostile environment.

Levels of reconnaissance

Like *FM3.0* and unlike *Truppenfuhrung*, *PU-36* does not specifically define levels of reconnaissance corresponding to the levels of war. For that matter, *PU-36* does not formally define the levels of war at all. Nevertheless, it does make the distinction by implication throughout the text. For example, in the discussion on aerial reconnaissance it claims: “air reconnaissance is the commander’s principle means of operational reconnaissance and one of his main resources for tactical reconnaissance.”⁷⁷ This at least implies recognition that commanders

⁷⁶ Triandafilov, V.K. The Nature of the Operations of Modern Armies. Edited by Jacob W. Kipp (Essex, England: Frank Cass and CO. LTD, 1994), 45-51.

⁷⁷ Simpkin, Richard. Deep Battle: The Brainchild of Marshal Tukhachevski (London: Brassey’s Defence Publishers, 1987), 186.

at each level require reconnaissance apparatus to gather information relevant to their decisions. Other Soviet works make the distinction as well. Aleksandr A. Svechen, addresses the varied requirements of strategic and operational intelligence in his work Strategy.⁷⁸ Unfortunately the Soviet model is not well developed.

Confusing the issue further, the Soviets define the terms “medium reconnaissance” and “close reconnaissance” in *PU-36*. The doctrine calls for divisional reconnaissance units to execute medium reconnaissance 25-30km in front of the main body. It then transitions to close reconnaissance when “the divisional and opposing main forces are in contact”. Echelons below division all conduct close reconnaissance. There is no indication that corps employed ground reconnaissance, being limited to aerial assets. There is also no hint of “deep” or “far” reconnaissance, which seems to be a logical extension of the medium-close framework. Based on the sketchy references it is possible to equate the corps aerial reconnaissance with deep reconnaissance and ultimately operational reconnaissance. However, this is by no means explicitly stated. Other Soviet works add alternatives. Triandafilov associates time with reconnaissance activities. “Reconnaissance must be sent as far forward as required to guarantee collection of information about the enemy by the time the army is within two days march of him.”⁷⁹ The specific two-day time was based on the time required to move a Soviet Front from line of march to attack formation. In this case the specific time is not as important as the notion that reconnaissance must happen in time to make the required decision. *PU-36* failed to pick a logical framework to describe the varied levels of reconnaissance. Instead it mixes the concepts of distances with levels or types of decision, and leads to confusion.⁸⁰

⁷⁸ Svechin, Aleksandr A. Strategy. Edited by Kent D. Lee (East View Publications: Minneapolis, Minnesota, 1991) 171-173, 316-317, 336.

⁷⁹ Triandafilov, V.K. The Nature of the Operations of Modern Armies. Edited by Jacob W. Kipp (Essex, England: Frank Cass and CO. LTD, 1994), 103.

⁸⁰ Simpkin, Richard. Deep Battle: The Brainchild of Marshal Tukhachevski (London: Brassey’s Defence Publishers, 1987), 189.

Without a clear framework it is difficult to understand how Soviet commanders planned on executing the ambitious task set out in their operational concept - delivering simultaneous strikes on the enemy tactical layout over the entire depth of his dispositions. What echelon was responsible for reconnaissance in the depth of the enemy? How far was deep? Was aviation the only means of looking deep? The manual claims that strategic cavalry was employed at operational and tactical levels and was well suited to flank operations, the development of penetrations, action in the enemy's rear areas, raids and the pursuit, but nowhere does it mention reconnaissance.⁸¹ Clearly, the cavalry had not yet abandoned its historical role as a shock force. As a result of all these inconsistencies, the Soviet theory of reconnaissance as expressed in *PU-36* failed to adequately account for its operational environment.

This failure is instructive to the contemporary doctrine writer; some framework for the execution of reconnaissance is necessary to allow commanders to achieve reconnaissance superiority and allow operational commanders to transition from one operation to the next. The German model chooses to define the levels by the type of information they are gathering. The Soviet model introduces the concept of distance or depth. Both hint at assigning specific echelons to each level. Regardless of the technique, some distinction appears necessary. Because *FM 3.0* makes no such distinction, our proposed theory will have to address the issue in Chapter 5. For now, we will return to a final aspect of Soviet theory, sequencing battles and transitions.

Sequencing battles and transitions

Central to the Soviet theory of war in the inter-war years, is the notion of sequencing battles and delivering an unrelenting series of blows. In his article "Questions of Higher Command," M.N. Tukhachevski addresses the issue at length.

On major fronts, the enemy generally endeavors to withdraw and has enough time to start doing so before he is destroyed. Should this happen, his final destruction is only likely to be accomplished by a series of follow-on operations. In this way the capability of

⁸¹ Simpkin, Richard. Deep Battle: The Brainchild of Marshal Tukhachevski (London: Brassey's Defence Publishers, 1987), 179-180.

the enemy army is progressively diminished by battle casualties and by the disruption which inevitably accompanies a retreat.⁸²

On the contiguous fronts predicted for future conflict, Soviet theorists envisioned a break-in battle, followed by a deep turning movement, and ultimately a relentless pursuit. Tukhachevski warns the reader that “ a well-conceived operation must be planned and backed with materiel over its whole course, right up to the destruction of the enemy.”⁸³ In the following discussion, he addresses the need to position signal networks, logistics, and reconnaissance in anticipation of a transition to follow on operations. This warning is useful as we develop our concepts to support full spectrum operations.

Contemporary predictions do not envision the massed armies and contiguous fronts of the 20th century, but the concept of sequencing battles is no less valid. As we discovered in the discussion of future force concepts in chapter 3, we will almost certainly be confronted with the requirement for forced entry, followed by force build up, decisive operations, and ultimately a transition to peace operations. The requirement to transition rapidly from one phase to the next, or to execute multiple operations simultaneously, argues for operational commanders to employ reconnaissance assets in both the current fight, and in preparation of the next fight. The need to keep one eye firmly on the next fight is evident in the writings of Triandafillov. “If the attention of troop commanders is focused entirely on enemy forces directly on the field of battle, the command element at the army and front level must direct its main attention to the enemy rear area to detect promptly areas of supply of new enemy forces.”⁸⁴ The operational commander clearly requires a reconnaissance organization capable of collecting across the depth of the enemy’s battlespace.

⁸² Ibid, 90.

⁸³ Ibid, 94.

⁸⁴ Triandafillov, V.K. The Nature of the Operations of Modern Armies. Edited by Jacob W. Kipp (Essex, England: Frank Cass and CO. LTD, 1994), 106.

To do this, operational reconnaissance organizations will need a balance of technical surveillance assets, reliable human intelligence collectors, and the capability to fight for information. Without a multi-dimensional approach capable of operating throughout the depth of the enemy formations, organizations will not be able to master transitions or maintain tempo.⁸⁵ In his book, Race to the Swift, Richard Simpkin compares the relative effectiveness of the German and Russian operational reconnaissance.

“The *Panzertruppe* ran extremely high and largely avoidable operational and tactical risks by failing to mount intelligence operations commensurate with the scope and tempo of their maneuver. Their aerial reconnaissance was excellent as long as the air situation allowed it to be. Their armored reconnaissance was skilful, at once discreet and bold, though perhaps lacking in depth. And their signals intelligence (intercept), on which they relied very heavily, was outstanding. But...there is no sign of the carefully directed gathering and updating of information on the enemy depth which the Red Army practiced in war and the Soviet Army has developed into a key aspect of its operational concept.”⁸⁶

It seems then, that beyond the simple capacity to conduct reconnaissance in multiple dimensions, commanders must be able to envision the operation as it unfolds and collect in both the physical and temporal depth of the battlespace.

Tukhachevski makes one final point worth considering. He argues that the initial engagement of the war will differ qualitatively from follow on operations.

In war the opening operations differ from subsequent ones in that the strategic deployment of forces takes place while there is still no contact with the enemy. It is carried out under cover of a special screen. In subsequent operations, however, regrouping and concentration take place under cover of the army's front.⁸⁷

This simple assertion and the text that follows it, have several logical implications. First, after the initial engagement some sort of security force must replace the “special screen” to protect the force as it prepares for subsequent operations. Something must interpose itself between the enemy to allow the rest of the force to maneuver out of contact. Second, it implies that the

⁸⁵ Simpkin, Richard E, Race to the Swift: Thought on Twenty-First Century Warfare (London: Brassey's, 1985), 145-161.

⁸⁶ Ibid, 35.

reconnaissance assets supporting strategic deployment may be significantly different than those of follow on operations. This is yet another indication of the utility of delineating levels of reconnaissance in our own theory. Finally, there is the recognition that once contact with the enemy begins, and the tempo quickens, combat will provide an ever-increasing source of information about future operations. This manifests itself in the Soviet reliance on fighting for information. All of these implications bear consideration in our theory of reconnaissance.

Summary

Soviet reconnaissance theory as expressed in *PU-36* was not as developed as its German counterpart *Truppenfuhrung*. Nevertheless, it included useful concepts in understanding reconnaissance. It identified a combat focused approach to reconnaissance. While this may be inappropriate to an American style of war, it highlights the necessity to prepare for an enemy capable of executing a combat focused ISR system. It also demonstrates the requirement to develop a framework of reconnaissance to support the overall operational concept. This shortcoming of *PU-36* is remarkably similar to the one identified in FM 3.0. Finally, the concept of generating tempo, by transitioning through a series of battles, has a variety of second order effects. Among these are the necessity to preposition assets to execute subsequent operations, the utility of multi-discipline collection assets, and the potential need to rely on fighting for information to maintain tempo.

Our study of historical doctrine will end here, recognizing that *Truppenfuhrung* and *PU-36* offer only snapshots of military thought as applied in combat in the context of their time. Neither of the two documents adequately addresses all three of the monograph's research criteria. However, when viewed together, they provide useful insight into the roots of current doctrine as expressed in *FM 3.0*. Moreover, they allow us to examine both threads of continuity and elements of discord between historical theories, current doctrine, and future force concepts. Having examined all three previously, Chapter 5 will propose a refined theory of reconnaissance.

⁸⁷ Ibid, 88-101.

CHAPTER FIVE

RECOMMENDED OPERATIONAL RECONNAISSANCE THEORY

This chapter proposes a theory of reconnaissance that fills the gap identified at the operational level. It packages the conclusions of the preceding chapters and attempts to do three things. First it will clarify and elaborate on the inadequate concepts presented in FM 3.0. Second, it will attempt to establish concepts that support future force concepts. Finally, it will attempt to incorporate lessons from historical doctrines to ground it in established concepts. It would be presumptuous to believe that the ideas presented below can stand on their own and merge wholesale into the next revision of FM 3.0. Rather, they should serve to spark a debate on reconnaissance and provide a framework for serious discussion.

THE ISR SYSTEM

The integration of an Intelligence, Security, and Reconnaissance system (ISR) is fundamental to achieving information superiority. The purpose of the ISR system is to produce the intelligence required to enable decision making while denying the same capability to the enemy commander. Successful ISR systems create an exploitable gap between friendly and enemy commanders knowledge of the battlefield. This exploitable gap enables the precision application of force, generates tempo, and reduces risk by alleviating uncertainty.

Intelligence is both an input and a product of the ISR system. “Intelligence is the product resulting from the collection, processing, integration, analysis, evaluation, and interpretation of available information concerning foreign countries or areas.”⁸⁸ Existing intelligence forms the basis of the intelligence preparation of the battlefield (IPB). IPB is a systematic approach to analyzing the enemy and environment. It integrates enemy order of battle with enemy doctrine as related to weather, terrain and civil considerations, and the mission. This produces an evaluation of enemy capabilities, vulnerabilities, and probable courses of action. As input into the ISR

system, the IPB drives information requirements for collection by the reconnaissance function of the system. As reconnaissance collects information, it is processed to produce the intelligence required to inform commander's decisions.

Reconnaissance is a task undertaken to collect information about an enemy, location, or neutral organization either by surveillance or through combat. Surveillance is the covert collection of information through stealth or technical means that attempts to avoid engaging with the enemy. Combat reconnaissance is an overt collection method and seeks interaction with the enemy. It takes the form of movement to contacts, raids, patrols, or reconnaissance in force. Both surveillance and combat reconnaissance have advantages and disadvantages discussed later in the chapter. Regardless of the method, reconnaissance collects information that upon analysis answers the commander's priority intelligence requirements.

Security is the final component of the ISR system. The security system seeks to deny the enemy information by defeating his reconnaissance systems. It also limits his freedom of maneuver over the battlespace. Finally, it provides early warning of enemy activity, and reduces uncertainty for the friendly commander. Security operations provide reconnaissance as a byproduct of their execution. Indeed, security and reconnaissance can not exist without the other. Commanders must make every effort to balance the competing requirements of friendly reconnaissance and security while simultaneously attacking the enemy ISR system.

LEVELS OF RECONNAISSANCE

There are three levels of reconnaissance that coincide with the levels of war; strategic, operational and tactical. Like the levels of war, they are not tied to specific echelons, but rather on the type of information required to enable decision making at the various levels of war.

Strategic reconnaissance collects intelligence required to support national level decisions on whether or not to commit forces to war. It answers questions in support of force development

⁸⁸ US Army. FM 3-0, Operations (Washington D.C.: Department of the Army, June 2001), 11-8.

before conflict, and allocating national resources during conflict. Strategic reconnaissance continues during both war and peace. It relies heavily on national level interagency and joint assets. It seeks to determine the enemies' order of battle, his doctrine, the nature of his infrastructure and resources, and his political objectives. It helps answer two questions. Whom might we fight and what do we need?

Operational reconnaissance collects intelligence required to support combatant commanders in the planning and execution of campaigns and the next engagement. Operational reconnaissance assists commanders in determining where, and in what sequence forces should be committed. It supports the commander in making decisions about transitioning operations between offensive, defensive, stability, and support operations, from phase to phase, or to a branch or sequel. It seeks to determine how the enemy has committed his order of battle in relation to the theatre of operations. It helps answer the question – what, where, and when should we commit to the fight?

Tactical reconnaissance collects intelligence to support commanders decisions regarding the execution of the current battle or engagement. Tactical reconnaissance verifies enemy orders of battle and disposition. It seeks to determine the enemies' course of action. Tactical reconnaissance supports target accusation and battle damage assessment. It facilitates movement by assessing terrain and the effects of weather. It helps answer the question - how is the fight going?

Collection assets are not specific to any level of reconnaissance. Indeed, information gathered by either a satellite photo or a cavalry scout, might have utility at any of the levels, and potentially all three simultaneously. A robust Command, Control, Communications, and Computer (C4) architecture allows commanders to share information both vertically among the levels and horizontally among adjacent commands. This ability to reach back to strategic intelligence and forward to tactical intelligence is critical to gaining information superiority.

Each level of war requires different capabilities of its ISR system. Strategic reconnaissance is often conducted before conflict. The information it seeks has long term implications and is not usually perishable. Consequently, strategic reconnaissance tends to rely on surveillance and covert collection as a primary source. Intelligence gathers over time and can develop into trends. Tactical reconnaissance, on the other hand, often supports high tempo operations that may require immediate collection of data. Once collected the data may be of value for a limited period. Commanders may not have the time to employ covert surveillance assets or to wait for trends to develop. Instead, they may need to fight for information to maintain tempo and information dominance. Operational commanders may find themselves alternating between the two extremes, patiently employing covert means in support of the initial engagement and executing combat reconnaissance to support the rapid transition to subsequent operations. Commanders must have forces trained and equipped to execute both surveillance and combat reconnaissance.

FUNDAMENTALS OF OPERATIONAL RECONNAISSANCE

The nature of operational reconnaissance is sufficiently different from tactical reconnaissance to warrant a different set of fundamentals. The fundamentals of tactical reconnaissance are: maximum reconnaissance force forward; orient on the location or movement of the reconnaissance objective; report all information timely and accurately; retain freedom of maneuver; gain and maintain enemy contact; and develop the situation rapidly.⁸⁹ These fundamentals apply at the operational level in varying degrees, but require the addition of the following additional fundamentals.

⁸⁹ US Army. FM 17-95, Cavalry Operations. (Washington D.C.: Department of the Army December 1996), 3-2.

Develop multi-disciplined reconnaissance organizations

The commander must be given assets and command and control structure to develop a multi-disciplined ISR organization that answers his CCIR. He requires the ability to fly both manned and unmanned aircraft to perform both reconnaissance and to air insert other specialized assets. He must have a mix of both stealthy long range surveillance units, and cavalry capable of ground reconnaissance in support of high tempo combat operations. He must have sufficient capability to interpose a security force between the enemy and his main body to ensure freedom of maneuver. He must have the technical capability to exploit the electromagnetic spectrum as well as the HUMINT capability to access the local population. He requires access to national space based surveillance assets. Given this array of collection assets, the commander can develop and maintain a tempo appropriate to the operation. He can maximize the advantages and disadvantages of specific collection assets, and most importantly, he presents the enemy with a wide range of challenges in order to avoid detection.

Deny the enemy access to multiple dimensions

Complementary to developing multi-disciplined reconnaissance organizations, the operational commander should attempt to deny as many dimensions to the enemy as possible. Gaining and maintaining air superiority is essential to gaining reconnaissance superiority. Access to the aerial medium is the most efficient means of gaining information about the depth of the opponent's battlespace. Controlling the electromagnetic spectrum, by both jamming and utilization of secure communications denies the other primary means of seeing into the depth of the enemy's formations. By denying these two functions, the enemy is limited to information on the current fight, and is less capable of anticipating branches and sequels to his course of action. Ground reconnaissance is the most difficult dimension in which to gain superiority, especially when operating in a hostile country. Enemy populations and terrain provide sanctuary to enemy reconnaissance assets making them difficult to counter.

Security as an adjunct to reconnaissance

Security operations are essential to successful reconnaissance. Reconnaissance, is a byproduct of successful security operations. Unfortunately, assets optimized for one may not be best suited to the other. The operational commander must assess the relative importance of each function in gaining reconnaissance superiority and ultimately information dominance. Priority may change based on the dominant spectrum of operations (offense, defense, stability, and support) and from initial to subsequent operations. To enable maneuver out of contact, the operational commander must assume the security task in order to maintain freedom of maneuver for his subordinate tactical commanders.

Position reconnaissance to rapidly transition to the next operation

Operational commanders operate on a longer time horizon than tactical commanders, and must be able to generate the collection assets to prepare for the next operation, even as he meets the needs of engaged tactical commanders. This does not suggest that he violates the tactical fundamental of maximum reconnaissance forward, by holding assets in reserve. Rather, the operational commander must plan ahead to withdrawal assets as engagements are handed over to tactical commanders, and reapply those assets to future operations. This requires the operational commander to retain the capability to rapidly extract and insert reconnaissance assets throughout the depth of his battlespace.

Fight for information as required to maintain tempo

The operational commander endeavors to establish the campaign's tempo to maximize his advantages and desynchronize the enemy. Stealthy reconnaissance may be appropriate during many phases of a campaign, especially if it enables maneuver out of contact. The operational commander must maintain the capability to transition to combat reconnaissance when the tempo of the campaign precludes the expenditure of time to develop the situation using stealthy measures. Additionally, complex and urban terrain, that minimizes the effectiveness of many technical base sensors, may require an increased reliance on combat reconnaissance. The

commander must balance the need to maintain tempo with the risks inherent in combat reconnaissance.

CONCLUSIONS

Information dominance has the potential to make warfighting formations significantly more effective, but only if information can be adequately inputted into the C4ISR system. Reconnaissance is the vital initial link in the system. Current U.S. Army doctrine fails to adequately address the role of reconnaissance, especially at the operational level. Without a sufficient doctrinal base, future force concepts will fail to meet expectations and put the Objective Force at risk. An analysis of current doctrine, future force concepts, and historical doctrines, leads to specific recommendations to strengthen doctrine in support of force development and operational employment. Among these are: the need to clarify our doctrinal terms; replacing the concept of Intelligence, Surveillance, and Reconnaissance (ISR) with Intelligence, Security, and Reconnaissance (ISR); Delineating between the strategic, operational, and tactical levels of reconnaissance and establishing fundamentals of operational reconnaissance.

Accepting these recommendations will have implications across doctrine, training, leadership, organization, materiel, and soldier development (DOTLMS). Several questions for further research present themselves. Does the operational commander need a dedicated reconnaissance and security formation? Is it the Armored Cavalry Regiment (ACR)? The Corps MI Brigade? Should those organizations be merged? What is the correct mix of surveillance and cavalry forces? What aviation assets does the operational reconnaissance commander need to insert and recover assets? Are tactical reconnaissance organizations overly optimized for stealth? Is the ACR overly optimized for security? The potential for change caused by each of these questions is enormous. A professional dialog on the issue of operational reconnaissance is needed to set the Objective force on the correct azimuth.

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